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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/933,364	08/20/2001	Paul H. Gailus	CM04766H	7135

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EXAMINER	
HASHEM, LISA	

ART UNIT	PAPER NUMBER
2645	

DATE MAILED: 02/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/933,364	GAILUS ET AL.	
	Examiner	Art Unit	
	Lisa Hashem	2645	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 October 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-4, 6, 9-10, 18-19, and 21 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by U.S. Patent No. 6,556,083 by Kadanka.

Regarding claim 1, Kadanka discloses in an electrical device (see Fig. 1) having a variable output (Fig. 1, 116), a feedback loop for adjusting the variable output, the feedback loop comprising (col. 2, lines 24-39): at least one adjustable zero element (Fig. 1, 108; col. 3, lines 29-40).

Regarding claim 2, the feedback loop of claim 1, wherein Kadanka further discloses the adjustable zero element is in a forward path of the feedback loop (Fig. 1, 108; col. 3, lines 29-40).

Regarding claim 3, the feedback loop of claim 1, wherein Kadanka further discloses having a characteristic bandwidth, the feedback loop further comprising: at least one adjustable pole element (Fig. 1, 106); whereby the at least one adjustable zero element and at least one adjustable pole element are operable to change the characteristic bandwidth of the feedback loop (col. 3, lines 10-40).

Regarding claim 4, the feedback loop of claim 3, wherein Kadanka further discloses the at least one adjustable pole element is in a forward path of the feedback loop (Fig. 1, 106; col. 3, lines 15-29).

Regarding claim 6, the feedback loop of claim 5, wherein Kadanka further discloses: a power amplifier (Fig. 1, 120: buffer amplifier) in the forward path so that the feedback loop can inherently be used as part of a radio transmitter (col. 1, lines 7-10; col. 2, lines 46-56).

Regarding claim 9, the feedback loop of claim 3, wherein Kadanka further discloses the at least one adjustable pole element and the at least one adjustable zero element are substantially contained within an integrated circuit (see Fig. 1, 100).

Regarding claim 10, the feedback loop of claim 3, wherein Kadanka further discloses the adjustable pole element is in the forward path of the feedback loop (Fig. 1, 106; col. 3, lines 10-29).

Regarding claim 18, Kadanka further discloses an integrated circuit implementing substantially all the components of a feedback loop with adjustable frequency response, the integrated circuit (see Abstract; Figure 1, 100; col. 2, lines 24-39) comprising: at least one adjustable pole element (Fig. 1, 106) for implementing an adjustable pole in the forward path of the feedback loop (col. 3, lines 15-29).

Regarding claim 19, the integrated circuit of claim 18, wherein Kadanka further discloses at least one adjustable zero element (Fig. 1, 108) for implementing an adjustable zero in the forward path of the feedback loop (col. 3, lines 29-40).

Regarding claim 21, Kadanka further discloses in an electrical device having a variable output (Fig. 1, 116), a feedback loop for adjusting the variable output (Figure 1, 100), the

feedback loop comprising: at least one adjustable zero element (Fig. 1, 108); and at least one adjustable pole element (Fig. 1, 106); whereby the at least one adjustable zero element and at least one adjustable pole element are operable to change the characteristic bandwidth of the feedback loop (col. 3, lines 10-40).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 5, 7, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kadanka, as applied to claim 1 above, and in further view of U.S. Patent No. 5,467,055 by Wray et al, hereinafter Wray.

Regarding claim 5, the feedback loop of claim 4, wherein Kadanka further discloses the at least one adjustable zero element is in the forward path of the feedback loop and further comprising: a reverse path of the feedback loop (Fig. 1, 110; col. 2, lines 56-64).

Kadanka does not disclose a mixer in the forward path of the feedback loop and a mixer in a reverse path of the feedback loop.

Wray discloses in a feedback loop having a loop and a closed loop frequency response (see Abstract; Fig. 2), the closed loop frequency response being characterized by a closed loop bandwidth (col. 2, lines 46-56), a method comprising steps of: having a larger gain (Fig. 2, 102) in the loop frequency response yielding a change in the closed loop frequency response (col. 3,

lines 21-63). Wherein Wray further discloses a mixer in the forward path of the feedback loop (Fig. 2, 22) and a mixer in a reverse path of the feedback loop (Fig. 2, 16).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the feedback loop of Kadanka to include mixers as taught by Wray. One of ordinary skill in the art would have been lead to make such a modification since the mixer in the forward path modulates the signal it receives by multiplication by the output of an oscillator and the mixer in the reverse path demodulates the signal by multiplying it with the output of the oscillator (Wray: Fig. 2, 25).

Regarding claim 7, the feedback loop of claim 3, wherein Kadanka does not disclose the feedback loop is a Cartesian feedback loop.

Wray discloses in a feedback loop having a loop and a closed loop frequency response (see Abstract; Fig. 2), the closed loop frequency response being characterized by a closed loop bandwidth (col. 2, lines 46-56), a method comprising steps of: having a larger gain (Fig. 2, 102) in the loop frequency response yielding a change in the closed loop frequency response (col. 3, lines 21-63). Wherein Wray further discloses the feedback loop is a Cartesian feedback loop (col. 1, lines 5-7; col. 4, lines 9-16).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the feedback loop of Kadanka to include the feedback loop is a Cartesian feedback loop as taught by Wray. One of ordinary skill in the art would have been lead to make such a modification since a Cartesian feedback loop is a closed loop feedback that yields a closed loop frequency response having a variable output (Wray: Fig. 2, antenna).

Regarding claim 12, the feedback loop of claim 1, wherein Kadanka further discloses an first amplifier (Fig. 1, 104) that amplifies an input signal to create a first amplified signal; and a second amplifier (Fig. 1, 120) that amplifies the input signal to create a second amplified signal.

Kadanka does not disclose the adjustable zero element comprises an adjustable amplifier, a low pass filter, and a summer to create an output signal.

Wray discloses in a feedback loop having a loop and a closed loop frequency response (see Abstract; Fig. 2), the closed loop frequency response being characterized by a closed loop bandwidth (col. 2, lines 46-56), a method comprising steps of: having a larger gain (Fig. 2, 102) in the loop frequency response yielding a change in the closed loop frequency response (col. 3, lines 21-63). Wherein Wray further discloses an adjustable first amplifier (Fig. 2, 105) that amplifies an input signal to create a first amplified signal; a second amplifier (Fig. 2, 20) that amplifies the input signal to create a second amplified signal; a low pass filter (Fig. 2, 106) that operates on the first amplified signal to create a filtered amplified signal; and a summer (Fig. 2, 103) to add the filtered amplified signal and the second amplified signal to create an output signal (col. 3, lines 21-40).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the adjustable zero element of Kadanka to include the following elements: an adjustable first amplifier, a second amplifier, a low pass filter, and a summer as taught by Wray to be included in the adjustable zero element to provide an output. One of ordinary skill in the art would have been lead to make such a modification since the above elements of Wray can be included in the adjustable zero element in the feedback loop to provide a linearized output.

5. Claim 8 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kadanka in view U.S. Patent No. 6,304,156 by Ishizaki et al, hereinafter Ishizaki.

Regarding claim 8, the feedback loop of claim 3, wherein Kadanka does not disclose the adjustable pole element is a circuit comprising a plurality of elements having impedance that can be selectively coupled to the other elements of the circuit.

Ishizaki discloses a dielectric filter that is a two-pole filter and an adjustable pole element comprising: the adjustable pole element is a circuit comprising a plurality of elements having impedance that can be selectively coupled to the other elements of the circuit (col. 4, lines 57-65; col. 15, line 16 – col. 18, line 4; see Fig. 2).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the adjustable pole element of Kadanka to include the adjustable pole element is a circuit comprising a plurality of elements as taught by Ishizaki. One of ordinary skill in the art would have been lead to make such a modification since the adjustable pole element comprises a plurality of elements and the element is a means for the frequency response of a feedback circuit to be adjusted.

Regarding claim 11, the feedback loop of claim 3, wherein Kadanka does not disclose the at least one adjustable pole element comprises two adjustable pole elements.

Ishizaki discloses a dielectric filter that is a two-pole filter and an adjustable pole element comprising: the adjustable pole element is a circuit comprising a plurality of elements having impedance that can be selectively coupled to the other elements of the circuit (col. 4, lines 57-65; col. 15, line 16 – col. 18, line 4; col. 29, lines 30-63; see Fig. 2 and Fig. 27).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the adjustable pole element of Kadanka to include the adjustable pole element comprises two poles as taught by Ishizaki. One of ordinary skill in the art would have been lead to make such a modification since the adjustable pole element comprises two adjustable poles wherein the poles are a means for the frequency response of a feedback circuit to be adjusted.

6. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kadanka in view Wray.

Regarding claim 20, please see the rejections to claims 1-6 above, to reject the feedback loop in claim 20.

7. Claims 13-17 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wray in view of Kadanka.

Regarding claim 13, Wray discloses in a feedback loop having a loop and a closed loop frequency response (see Abstract; Fig. 2), the closed loop frequency response being characterized by a closed loop bandwidth (col. 2, lines 46-56), a method comprising steps of: having a larger gain (Fig. 2, 102) in the loop frequency response yielding a change in the closed loop frequency response (col. 3, lines 21-63).

Wray does not disclose the loop frequency response having at least one pole.

Kadanka further discloses in an electrical circuit having a variable output (Fig. 1, 116), a feedback loop for adjusting the variable output (Figure 1, 100), the feedback loop comprising: at least one movable pole element (Fig. 1, 106); whereby the one movable pole element is operable to change the characteristic bandwidth of the feedback loop (col. 3, lines 10-29).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the feedback loop of Wray to include an adjustable pole element as taught by Wray. One of ordinary skill in the art would have been lead to make such a modification since an movable pole element can introduce a low frequency dominant pole and be moved to a different location to yield a change in the closed loop frequency response.

Regarding claim 14, the method of claim 13, wherein Wray in view of Kadanka further disclose the step of moving a pole is accomplished by switching among a plurality of elements having different impedances (Wray: col. 3, lines 21-63).

Regarding claim 15, the method of claim 13, wherein Wray in view of Kadanka further disclose the step of: moving a zero in the loop frequency response yielding a change in the closed loop frequency response (Kadanka: col. 4, lines 29-40).

Regarding claim 16, the method of claim 15, wherein Wray in view of Kadanka further disclose the step of moving a zero is accomplished by adjusting an amplifier with an adjustable gain (Wray: Fig. 2, 102; col. 3, lines 21-40).

Regarding claim 17, the method of claim 13, wherein Wray in view of Kadanka further disclose the feedback loop contains a power amplifier for amplifying a signal so that it can be transmitted over a radio channel (Wray: Fig. 2, 10; col. 3, lines 21-40).

Regarding claim 22, please see the rejections to claims 13 and 15 above, to reject the feedback loop in claim 22.

Response to Arguments

8. Examiner acknowledges the correction to the 35 USC 112 rejection of claim 5 and withdraws the 35 USC 112 rejection of claim 13 in the Amendment filed on October 12, 2004, hereinafter Amendment.

9. Applicant's arguments, see Amendment, with respect to the rejection(s)of claim(s) 1-22 under Cygan and Cygan in view of Wray have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made of claims 1-22. Please see the rejection(s) above.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- U.S. Patent No. 5,508,570 by Laber et al disclose a feedback path comprising an adjustable zero and an adjustable pole

11. Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

Or faxed to:

(703) 872-9314 (for formal communications intended for entry)

Or call:

(703) 306-0377 (for customer service assistance)

Hand-delivered responses should be brought to: Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lisa Hashem whose telephone number is (703) 305-4302. The examiner can normally be reached on M-F 8:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Fan Tsang can be reached on (703) 305-4895. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-3900.

LH

lh
February 21, 2005

FAN TSANG
SUPERVISORY PATENT EXAMINER
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